

## CLAIMS

1. (Previously Presented) A medical imaging apparatus, comprising:

a first imaging device for obtaining one or more images of a subject patient, wherein at least a portion of the first imaging device has a first bore through which a patient axially translates during formation of one or more images by the device;

a second imaging device for obtaining one or more images of the subject patient, wherein at least a portion of the second imaging device has a second bore through which a patient axially translates during formation of the images by the device;

the first and second imaging devices, each secured by a housing in a fixed position relative to the other during the formation of one or more images of the subject patient, wherein the bore of each device is substantially aligned axially with the bore of the other; and

an actuating mechanism for moving the first and second imaging devices between an adjoining position, wherein a substantially continuous bore is formed by the first and second bores, and an open position, wherein the first and second bores are separated by a distance sufficient to allow direct access by a caregiver to a subject patient, positioned between the first and second bores.

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) A medical imaging apparatus, comprising:

a first medical imaging device having a first opening for receipt of a subject patient;

a second medical imaging device having a second opening for receipt of the subject patient;

alignment structure securing the openings of the first and second imaging devices in alignment with an imaging axis during the formation of one or more images, by at least one of the imaging devices, of the subject patient;

a patient support structure extending through the openings of the first and second imaging devices during the formation of one or more images by at least one of the imaging devices; and

an actuator for separating the first and second openings of the first and second imaging devices from each other by a selected distance, ~~The medical imaging apparatus of claim 3,~~ wherein the distance between the first and second openings is sufficient to allow direct tactile contact between a caregiver and the subject patient.

5. (Cancelled)

6. (Canceled)

7. (Currently Amended) The medical imaging apparatus of Claim 3 1, wherein the first imaging device comprises one of a group consisting of CT, MRI, X-Ray, and Ultrasound devices.

8. (Currently Amended) The medical imaging apparatus of Claim 3 ~~or 7~~ 1, wherein the second imaging device comprises one of a group consisting of SPECT and PET devices.

9. (Currently Amended) A medical imaging apparatus, comprising:

a first medical imaging device having a first opening for receipt of a subject patient;

a second medical imaging device having a second opening for receipt of the subject patient;

alignment structure securing the openings of the first and second imaging devices in alignment with an imaging axis during the formation of one or more images, by at least one of the imaging devices, of the subject patient;

a patient support structure extending through the openings of the first and second imaging devices during the formation of one or more images by at least one of the imaging devices; and

an actuator for separating the first and second openings of the first and second imaging devices from each other by a selected distance ~~The medical imaging apparatus of Claim 3~~, wherein the axes of the first and second openings of the first and second imaging devices are substantially aligned.

10. (Currently Amended) The medical imaging apparatus of Claim 3 9, wherein the alignment structure comprises a lug mounted on the first imaging device engaging socket mounted on the second imaging device.

11. (Previously Presented) A medical imaging apparatus, comprising:

- a first housing supporting a first tomographic scanner having a first bore for obtaining tomographic imaging information from at least a portion of a patient;

- a second housing supporting a second tomographic scanner having a bore for obtaining tomographic imaging information from at least a portion of a patient;

- an alignment structure securing the bores of the first and second imaging devices in alignment with an imaging axis during the formation of one or more tomographic images, by at least one of the imaging devices, of the subject patient wherein the alignment structure comprises a lug mounted on the first imaging device engaging a socket mounted on the second imaging device; and

- a linear actuator for positioning each of the first and second housings between an adjoined position, with the axes of the first and second scanner bores substantially aligned, and a separated position, with the scanner bores spaced from each other by the linear actuator.

12. (Original) The medical imaging apparatus of Claim 11, wherein the first and second housings form a patient access area between the first and second scanners bores when placed in the adjoining position, the access area allowing direct access by a caregiver to a patient extending through the first scanner bore and at least partially positioned between the first and second scanners.

13. (Original) The medical imaging apparatus of Claim 11, wherein the linear actuator comprises:

a guide rail substantially aligned with the axes of the first and second bores; and  
a drive assembly for moving at least one of the first and second housings relative to the other housing in a direction substantially aligned with the axes of the first and second bores.

14. (Original) The medical imaging apparatus of Claim 11, wherein the first and second scanners are adapted to operate in different modalities with respect to each other.

15. (Original) The medical imaging apparatus of Claim 14, wherein one of the first and second scanners is adapted to obtain imaging information representing anatomical structures of the patient.

16. (Original) The medical imaging apparatus of Claim 14 or 15, wherein one of the first and second scanners is adapted to obtain imaging information representing physiologic functions of the patient.

17. (Cancelled)

18. (Canceled)

19. (Canceled)

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) A medical imaging apparatus, comprising:

a first medical imaging device having a first opening for receipt of a subject patient;

a second medical imaging device having a second opening for receipt of the subject patient;

alignment structure securing the openings of the first and second imaging devices in alignment with an imaging axis during the formation of one or more images, by at least one of the imaging devices, of the subject patient;

a patient support structure extending through the openings of the first and second imaging devices during the formation of one or more images by at least one of the imaging devices; and

an actuator for separating the first and second openings of the first and second imaging devices from each other by a selected distance, wherein the distance between the first and second openings is sufficient to allow a caregiver to perform one or more interventional applications on the subject patient. ~~The medical imaging apparatus of Claim 3, wherein at least one of said one or more the interventional applications procedure~~ is a portion of a biopsy procedure.

23. (Previously Presented) A medical imaging method, comprising the steps of:

operating a first medical imaging device having a first operating modality to obtain a first set of imaging information from at least a portion of a subject of interest;

operating a second medical imaging device having a second operating modality to obtain a second set of imaging information from at least a portion of the subject of interest; and

configuring an arrangement of the first medical imaging device and the second medical imaging device, said configuring including actuating an actuator to move at least one of the first medical imaging device or the second medical imaging device such that the first medical imaging device and the second medical imaging device are in a first configuration;

wherein the first configuration includes the first medical imaging device and the second medical imaging device positioned in a substantially adjoining position.

24. (Previously Presented) The medical imaging method of claim 23, further comprising the step of:

configuring an arrangement of the first medical imaging device and the second medical imaging device, said configuring including actuating an actuator to move at least one of the first medical imaging device or the second medical imaging device such that the first medical imaging device and the second medical imaging device are in a second configuration;

wherein the second configuration includes the first medical imaging device and the second medical imaging device positioned in a substantially separated position to allow a caregiver to perform at least a portion of an interventional procedure on the subject of interest.